IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Murphy, et al.
Serial No. : 09/619,032
Filed : July 19, 2000
Title : ALPHA-GALACTOSIDASE

Art Unit : 1652
Examiner : Delia M. Ramirez, Ph.D.

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DECLARATION UNDER 37 C.F.R. § 1.132

Sir:

1. I, Jay Short, am a co-inventor with Dennis Murphy, John Reid and Eric J. Mathur, on the above-identified patent application.

2. I am an expert in the field of molecular biology and enzyme development and was an expert at the time of the invention. I am presently employed as CEO and as a research scientist at Diversa Corporation, San Diego, CA, assignee of the above-referenced patent application. My resume is attached as documentation of my credentials.

3. I declare that the state of the art at the time of the invention and the level of skill of the person of ordinary skill in the art, e.g., screening enzymes, and nucleic acids encoding enzymes, for alpha galactosidase activity, was very high. Using the teaching of the specification, including the exemplary protocol as set forth in Example 2, pages 18 to 19, of specification, and other protocols known in the art at the time of the invention, one skilled in the art could have selected routine methods known in the art at the time of the invention to express variants of nucleic acids encoding the exemplary enzyme of the invention and screen them for expression of polypeptides having alpha galactosidase activity. In particular, one skilled in the

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I hereby certify under 37 CFR §1.8(a) that this correspondence is being deposited with the United States Postal Service as first class mail with sufficient postage on the date indicated below and is addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

9/22/03
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Jeanne Amour Rice
Signature

JEANNE AMOUR RICE
Typed or Printed Name of Person Signing Certificate

art could have used routine protocols known in the art at the time of the invention, including those described in the instant specification, to screen for nucleic acids encoding polypeptides having 70% sequence identity to SEQ ID NO:4, or active fragments thereof, for alpha galactosidase activity. While the numbers of samples needed to be screened may have been high, the screening procedures were routine, and successful results (i.e., finding variant nucleic acids encoding alpha galactosidases) predictable. Furthermore, it would not have required any knowledge or guidance as to which are the specific structural elements, e.g., amino acid residues, that correlate with alpha galactosidase activity to routinely create variants of an exemplary nucleic acid and test them for the expression of polypeptides having an activity, for example, an alpha galactosidase activity.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted

Date: 8/25/03

Jay Short